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261 262 without food, and 'sat in the hut and drank water and took snuff'.

262 These extreme cases of hunger are admittedly rare, but it is a fact that when the supply of the staple millet is at an end, the Bemba are reduced to foods with a much lower nutritive value. The millet, of which, as we shall see, their diet is mainly composed, lasts on an average for nine months of the year only (April to November or December). Chiefs reckon to make their supply last till the new harvest and even later. In a good year some commoners would be able to do so, but I should doubt if this number ever reached more than half of the villagers in any one settlement.[1] When the staple food runs low, the only other cultivated crops available in the scarce season are edible gourds, which are largely composed of water, and small quantities of maize. Otherwise the natives rely on the bush, which provides fungi and caterpillars during these months.[2]

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261 Thus the existence of a pronounced hunger season can be established without making any elaborate quantitative investigation. It is correlated with changes in the social life of the people which are equally marked. All activity is reduced to a minimum when food is short, and in a specially bad year garden work tends to be skimped. The direct effects of the shortage on the people's work output was illustrated in striking fashion during the recent locust raids (1933–4), when the gardens of some villages were destroyed and others less than a day's journey off escaped. For instance, at Candamukulu in April, where the people's gardens had escaped damage—they rose at six, cut trees to clear their gardens, rebuilt their houses, and gave an impression of constant activity and busyness. Sixty miles off, at a settlement that had empty granaries and ravaged gardens, the people had not yet started the work of the year at all.

[1] e.g. in Jan. 1934 at Kampamba, near Kasama, 9 out of 18 granaries were empty = 50%.
In Jan. 1934 at Mubanga, near Kasama, 20 out of 37 granaries were empty = 54%.
In Feb. 1934 at Kungu, near Kasama, 26 out of 29 granaries were empty = 89%.
The remaining granaries were nearly empty in each case.

[2] In one of the villages observed in February 1934, one family lived six days on gourds, while in another a woman who was nursing a baby fed herself and three children on mushrooms only for two days. At a third village in April of the same year, one family lived on wild spinach only for five days.

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As a staple food, finger millet has a high nutritive value compared to other cereals used in this area. It is far superior to cassava in protein, fat, and mineral salts, and to the white millet of East Africa both in fat and minerals. Though inferior to maize in protein and fat, it is only very slightly so, and is again superior in minerals (iron, calcium, and phosphorus). On the other hand, as has been pointed out, the supply of millet as produced by the Bemba only lasts some nine months of the year, whereas the cassava roots remain in the garden beds throughout the year and are used a little at a time as wanted, so that people like the Bisa, who live on this crop, have a regular diet throughout the year. Sweet potatoes also can be eaten at most seasons, except during the rainy months. Millet has a further drawback in that it is used for beer as well as for porridge, and though the former evidently provides a valuable source of vitamin B contained in the germinating grain, yet it is an extravagant way of using the supplies, and the Bemba are in a worse position than peoples who grow a separate cereal for the purpose of brewing.

Their next most valuable foodstuffs are the pulses, ground-nuts, ground-beans, Kaffir beans, cow-peas, &c., commonly grown by most of these Bantu peoples. These are a valuable source of protein and fat, ground-nuts being particularly rich in the latter, and this adds to their importance in a diet in which fats of all kinds are very deficient. In fact, Trapnell suggests that the nutritive value of most of these simple cereal diets of Northern Rhodesia depends largely on the amount of the subsidiary pulses grown in addition to the main cereal crop.[1] In the case of the Bemba this supply of pulses seems to be far from adequate.[2] The store of dried beans and peas lasts only a few months of the year.

[222] For their animal protein the Bemba depend on game, fish, caterpillars, wood-lice, &c., obtained from the bush, but game is very scarce in this area, is only easily hunted at certain seasons

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from this carbohydrate food, and about 5 per cent. from fat, whereas we get 40–50 per cent. from carbohydrates and 30–40 per cent. from fat. Cf. op. cit. *Africa*, vol. ix, no. 2, 1936.

[1] Report to the Diet Committee of the N.R. Government, 1937.

[2] Mrs. Gore-Browne reports that in 15 villages visited from July to January 1936–7, no householders had any cow-peas left and only one any ground-nuts. In granaries I examined in a village in the same area in September 1933, 6 out of 14 householders had a few ground-nuts, beans, and dried potatoes. In the Kasama district in January 1934, 25 out of 37 householders had no store of pulses left at all.

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of the year, and in some districts is hardly obtainable at all. Of fifteen villages visited by Mrs. Gore-Brown in 1936, four had eaten no meat at all during the seven months under observation, although these communities were settled in reputedly good hunting country. In the remaining 11 villages such totals as 13, 5, 9, and 25 small duiker had been divided. In another village where the reckoning had been made for a period of a year 40 duiker had been killed.[1] Of the three villages in which the diets have been analysed (Appendix C), it will be seen that no animal protein of any kind was eaten during the two weeks of observation in the case of one: in another it was very low.

In the ordinary Bemba village a little fish is caught in the small rivers at certain months of the year when the waters are flooding the banks or are falling again, but fish cannot be reckoned as an important article of diet except among the peoples who live on the banks of big rivers such as the Chambesi. Caterpillars are obtainable everywhere during the wet season, and make a quite considerable contribution to the animal protein of this diet.

Of the other subsidiary food, green leaves, either cultivated or wild, which form the main source of vitamin C, are obtainable for six or seven months of the year (April to September), while fruits are limited to two months (October and November). The edible gourds and mushrooms eaten as subsidiary foods in the hunger months of the year have little nutritive value.

Salt is not easily obtained (cf. p. 55). When available, about a teaspoonful a day would be spared for cooking, but it is not uncommon to find households that have been some weeks without any salt at all, and which have not been able to make good this deficiency by eating meat.

As far as it is possible to speak of the composition of the diet as a whole, generalizations based on figures collected in three villages at different seasons of the year show that the average calorie intake is 1,706 per man value per day, i.e. just over half that which is considered adequate in England and America. The fat is only an eighth as much as is usually eaten on our mixed diets. The intakes of calcium and phosphorus compare very favourably with those in England and America. Salt is exceedingly deficient at all seasons of the year. While it is impossible, for want of further information, to make direct comparisons with English scales of diet, it is

[1] A duiker might be reckoned the size of a small goat.

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Rainy weather. The girls of the village off to gather mushrooms.
Men make the carrying-baskets.

[facing p. 42]

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stringy and bitter to the taste, but the fact that these plants grow wild also tends to make them despised. For instance the wild orchid (*icikanda*) gathered by the children in September is considered with special contempt. A passing Lunda bragging to some Bemba villagers about the superior wealth and civilization of his own people, clinched the argument by saying, 'In our country we just divorce our wives if they serve *icikanda* relish, whereas yours have to cook it every day.' The burrowing cricket (*nyense*) and the mice, moles, or small birds which little boys trap are also despised. 'Food for children and for women in the hunger months' is an expression often used of such foods with an expression of contempt.

European foods are used only in the villages round white settlements and then apparently entirely for their kudos value, or else their ease in preparation.[1] Such articles are chiefly limited to tea, coffee, sugar, bread, and sardines. They seemed to me to be eaten as extras, used for purposes of entertainment or display, rather than an essential part of the diet, but the habit may have become more common since my visit to the area in 1934. Then clerks and native storekeepers in the Kasama townships used to be carried trays of tea in the middle of the morning by their wives, and in a neighbouring village I have seen four young men, after eating their ordinary meal of porridge and relish, sit down to share a tin of sardines on a table spread in full view of the community and ornamented with empty whisky bottles. They were described as having a 'sundowner'. In the same year a successful dance club run by an enterprising native returned from the mines, sold lemonade at 3*d*. a glass (i.e. a whole day's wages) and scones made from white flour in preference to supplying beer. It is purely want of money which prevents the extension of such customs in the modern type of village.

Magico-Religious Attitudes to Food.

(*a*) *Food taboos.* The whole question of food taboos has bulked very largely in anthropological literature from the earliest days. Such ritual restrictions on diet seem to have struck the attention of European observers immediately, and there is no doubt that where a particular class of food is tabooed permanently to a whole community or to a large section of it, such as a clan, age-grade, or

[1] Bread is liked chiefly for the latter reason I think.

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Water must also be fetched from the stream morning and evening (*ukutapa menshi*). A good housewife always has one or two *inongo* full of water standing to cool in her hut, and has warm water ready in the early morning for her husband to wash in, and for the baby's bath. No man ever draws for himself under village conditions, and the fetching of water is reckoned one of the essential duties of a wife.[1] The provision of drinking water for her husband is equally a woman's duty, and at a chief's court where old-fashioned ceremony is still observed, his wives kneel to offer him water in a gourd.

Besides collecting wood and water the woman has to provide relish, and this takes up much of her time at certain seasons of the year. During the rainy months regular expeditions are made daily to look for mushrooms. Women and girls go out with carrying baskets and line up across the bush, each picking what she finds. Such an expedition might take two or three hours. Wild spinaches have also to be looked for, and in the hot weather the girls are sent to gather *icikanda* orchids which grow in certain spots known to the natives, or the different wild fruits. Even when garden vegetables are available it may be necessary to walk two or three miles to a distant field to pick them. This is specially so when the gourds and pumpkins ripen, and it is reckoned that every other day the housewife must go out to her gardens to pick them (*ukusaba*) as they reach their prime. All these accessory activities have somehow to be fitted into the day besides the regular gardening and cooking.

The main processes of porridge making and cooking relish are themselves lengthy. The average time taken by seven women to thresh, winnow, and grind flour was 7·4 minutes a pound, and since about six pounds would be used daily by an ordinary family the time taken would be about three-quarters of an hour.[2] These women were, however, working uninterruptedly and knew they were being timed. An hour would be a more likely time under normal conditions. Different relishes take half to three-quarters

[1] A middle-aged widower and widow were discussing the possibility of marriage prosaically together. The would-be-bridegroom said, 'Are you the kind of woman who always has hot water ready for her husband in the morning, and never grumbles when he asks for more?' The prospective bride answered, 'Yes, that is what I do. But are you the kind of man who gives his wife a new cloth occasionally and doesn't spend his money all on himself?'

[2] For note [2] see next page.

This vivid interest in the forest is reflected in magic belief. It

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is well known in most Bantu languages the word for tree (*umuti*, or its equivalent form) is used for medicine or charm. It is not only that Africans have a wide knowledge of the curative properties of the roots, leaves and bark of different trees, but that they believe them to possess magical properties against ill health, witchcraft, or evil spirits. I know no Bemba charm which does not contain the roots, bark, or leaves of at least two different trees.

824 To his knowledge of the species of trees and plants in the neighbourhood, the native allies a keen interest in their whereabouts. As he walks through the bush he registers almost unconsciously the presence or absence of certain trees in a way that constantly surprises the European. Such memories seem indelibly impressed on the Bemba because of their practical importance. Driving 400 miles from Broken Hill to Kasama, the centre of the district, there is nothing to be seen all day but a flat expanse of trees, mostly deciduous, with hard shiny leaves, and dusty shrubs and grasses block the view from the road. Europeans tend to find this bush country unbearably monotonous, but the African apparently sees quite a different scene. To him such a route would be described in terms of trees. Every turn in a fifteen-mile walk would be defined in such phrases as, 'Where that big *mupundu* grew', or 'Where that *umusuku* stood with the broken branch', and so forth, the whole punctuated with cries of enthusiasm: 'That was a fine tree!' These people's thoughts and interests are in fact entirely concentrated on objects that the average white man simply does not see.

●222 Besides their need for wood the Bemba rely on the bush for the animals and birds, caterpillars, insects, and the plants which are indispensable for their diet, and they are constantly on the look-out for such objects as they walk. Both men and women have the power of continuing an animated conversation without ever missing a single honey-bee nest or a distant mushroom, and remembering how to locate such a find a second time. I once stumbled on a bush path, turning suddenly to look at a strip of sunset against a black cloud. The native who helped me up said sympathetically, looking at the bough which he believed had riveted my attention, 'Yes, I saw that swarm of caterpillars too, but the grubs are not big enough to eat yet. I shall tell my wife to fetch them later on. I shall say, "Look for the *umutondo* tree to the east of where the path forks".' His observations had been made in a flash during our

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talk, but he had registered the memory for future use. He had, in fact, a vivid, if entirely selective, interest in the vegetation around him.

The natives' passionate enthusiasm for hunting adds another interest to their travel through the bush. To them the countryside can be roughly classified according to the type of game that is found there, and in ordinary speech the people describe an area by saying, for instance, that it is a land of elephants or hippos, or that it is a lechwe or reed-buck district. But apart from an interest based very largely on their craving for meat, the Bemba seem fascinated, like other African peoples, by the characteristic appearance and habits of the animals themselves—the fantastic size of the elephant, the laugh of the hyena, the ferocity of the lion or the crocodile. The hunter tracking his quarry through the bush is plainly keyed to a pitch of concentration watching for every sign of its tracks, but men and women simply travelling from one village to another will also seek for traces of game of any sort, just from their interest in the habits of the animals themselves. The different species of fish have not the same fascination for the majority of the Bemba, although they form quite an important source of food. But they seem deeply interested in the rivers of their country. They compare the value of different chieftainships, not only in terms of the game in each particular district, but also of its supplies of fish. Rivers are among the most striking landmarks in this country and form the natural boundaries of chiefs' territories. Each tributary stream, however small, has its name which is used to define the position of different villages in the neighbourhood, while the bigger rivers seem to be a source of aesthetic delight, though perhaps merely as the potential source of so much food. I noticed on different trips that carriers spoke with real enthusiasm of the size of any large river that we were about to reach, and I have heard the natives from one district compare their rivers braggingly with those of other areas. A knowledge of the exact course of different rivers is only gradually acquired by a travelled man and is much admired. I once heard a group of children under 12 arguing hotly as to the order in which different local streams flowed into the Manshya river nearby. The discussion became so heated that a series of bets were arranged as to the results. It was characteristic of a tribe with few material possessions that the wager should consist of a stated